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ABSTRACT

Noting that interactive video instruction (IVI) should not and cannot replace classroom instruction, this paper offers an introduction to interactive video instruction as an innovative technology that can be used to expand pedagogical opportunities in public speaking instruction. The paper: (1) defines the distinctive features of IVI; (2) assesses the effectiveness of IVI; (3) describes videodisc modules applicable for public speaking instruction; (4) provides information on equipment and costs for implementing IVI; and (5) suggests strategies for integrating video instruction into public speaking instruction. The paper concludes that IVI can provide effective oral communication instruction to students outside the classroom, thus allowing more time in the classroom for performance, feedback, evaluation, and discussion. (Contains 28 references.) (RS)

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USING INTERACTIVE VIDEO INSTRUCTION TO ENHANCE PUBLIC SPEAKING INSTRUCTION

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USING INTERACTIVE VIDEO INSTRUCTION TO ENHANCE PUBLIC SPEAKING INSTRUCTION

Time is of the essence in public speaking courses. Instructors must provide, review, and reinforce information regarding outlining, topic development, delivery, critical thinking, and a long list of other important topics that students require in order to construct and deliver classroom speeches effectively. Many of these units or topic areas can not be covered in detail because time must be allocated for presentations and critiques. Interactive video instruction in oral communication can provide some of this information outside of class time, thus allowing students to learn, internalize, and practice knowledge and skills which are essential to classroom performance.

> Technology has the capacity to free courses from the constraints of time and, to some degree, space. Software is available and constantly being developed to introduce students to everything from the principles of public speaking to statistics. (State Council of Higher Education for Virginia,

1992, p. 34)

Although interactive video instruction is a relatively recent development, it is used extensively in military and corporate training programs. More than 1500 videodisc training programs are available and at least half of America's school districts report that they will increase their interactive videodisc training capabilities in the next few years (Mann, 1989).

This review offers an introduction to interactive video instruction as an innovative and important technology that can be used to expand pedagogical opportunities in public speaking instruction. It is important to note that interactive video instruction should not and can not replace classroom instruction. Rather, interactive video's potential lies in its ability to provide oral communication instruction in contexts and at times that, currently, are not available in traditional instruction.

> Technology is a powerful tool for instruction that does not require the continuous presence of a faculty member. But it has to be used correctly to free faculty <u>for</u> students, not <u>from</u> them. (State Council of Higher Education for Virginia, 1992, p. 7, emphasis

in original)

This review, first, defines the distinctive features of interactive video technology; second, assesses the effectiveness of interactive video instruction; third, describes videodisc modules applicable for public speaking instruction; fourth, provides information on equipment requirements and costs for implementing interactive video instruction; and finally, suggests strategies for integrating interactive video instruction into public speaking instruction.

WHAT IS INTERACTIVE VIDEO?

Interactive video instruction (IVI) allows students to interact via a computer with any combination of videotape, videodisc, film, slide, and graphic materials. In most cases, the student can view a segment of a module and respond to it. Based on that response, appropriate video/textual information is provided. Most IVI modules are designed to provide individualized self-paced instruction. Rapid access to information is available based on the student's demonstrated understanding of topics or expressed interest in specific information. Although the degree to which modules are truly interactive can vary

significantly, well-designed IVI modules adapt to the user's knowledge, ability, and interest by "branching" to remedial material, more advanced topics, or additional examples in direct response to the student's input (Gayeski & Williams, 1985).

One of the key attributes of IVI is the level of involvement that students experience. Instead of reading or listening passively, the interactive video user must respond actively to the program. Effectively designed IVI materials provide practice, feedback, repetition, motivation, and exposure to multisensory information. This method of instruction also can stimulate interaction and collaborative learning among students as they work together on a program (Chang, 1989; Cockayne, 1990; Dalton, 1990; Dalton, Hannafin, & Hooper, 1989; Noell & Carnine, 1989).

IVI programs can allow the computer to record students' responses and response times for many activities and questions. Instructors can use this information to gain valuable insights about student learning. This particular feature also opens "avenues for behavioral research and psychological assessment through less obtrusive measures, more vivid nonverbal stimuli, and adaptive, individualized testing" (Gayeski

& Williams, 1985, p. 144).

THE PEDAGOGICAL IMPACT OF INTERACTIVE VIDEO INSTRUCTION

Despite some legitimate concerns regarding theoretic grounding of research and the research designs of several studies (Clark, 1985; Cronin & Cronin, 1992a), recent empirical investigations support the conclusion that IVI generally enhances learning (Bosco, 1986; DeBloois, 1988; Kalowski, 1987). Extensive meta-analyses reported significant effects of IVI on cognition, performance, and learning efficiency in a variety of situations and applications, primarily in hard skill areas (Fletcher, 1990; McNeil, 1989). Each of these meta-analyses found that IVI improved achievement and performance by about .50 standard deviations over less interactive, more conventional instruction. This improvement is roughly equivalent to moving the typical user from the 50th to the 69.2 percentile of achievement (McNeil, 1989). Cronin and Cronin (1992b) reviewed 33 recent studies that dealt with "soft skill" areas (such as communication skills, logical reasoning, foreign language, and sales training) and concluded that IVI produced significantly greater cognitive and application gains than

conventional methods of soft skill instruction.[1]

The research on IVI is rapidly evolving and complex, making it difficult to develop dependable generalizations regarding specific areas of effectiveness. However, the literature appears to support three conclusions about the pedagogical effectiveness of IVI that are relevant to public speaking instruction.

First, in general, IVI produces greater learning than linear video instruction (Chen 1990; Penaranda, 1989). Simply showing a linear videotape of a successful or unsuccessful speech offers no active participation in the learning process and no feedback concerning the acquisition of new skills or knowledge. On the other hand, IVI allows students to participate actively in specific aspects of the skill or knowledge being taught, and receive immediate feedback.

Second, assuming novelty effects are not significant, users prefer IVI over other instructional methods. Gold (1989) reviewed 30 studies that compared IVI with other training methods and concluded that IVI enhanced learning and that participants preferred IVI over other training methods. This is not to suggest that instructors should make a decision on

instructional approaches based on student preference. It is important to note that students respond positively to this form of instruction and are likely to select it, if available, as a means of extending classroom instruction.

Third, in most comparisons with conventional instruction, students using IVI achieved higher test scores with less instructional time required (Fletcher, 1990; Kearsley & Frost, 1985). Coupled with the reported enhancement of learning via IVI, the time efficiency associated with IVI makes it a powerful adjunct to classroom instruction. The extension of the classroom, in this way, can assist in making more time available for performance activities such as student speaking assignments, oral critiques, and videotaping.

IVI VIDEODISC MODULES APPLICABLE FOR PUBLIC SPEAKING INSTRUCTION

Coping with Speech Fright

This module provides tutorial and simulation instruction in cognitive restructuring techniques to help students manage speech fright. Topics include the nature of speech fright, the rationale for cognitive restructuring, identification and validity testing of negative self-statements, replacement of negative

statements with positive self-statements, and additional approaches to coping with speech fright. This module includes a workbook for student use. Empirical evaluations support the efficacy of this IVI module. The IVI program was as effective on dependent measures as virtually identical instruction presented by outstanding public speaking instructors via lecture/linear videotape. Students in the IVI treatment condition achieved significantly higher immediate and delayed cognitive test scores and significantly lower pre-to-posttest scores on the public speaking section of the Communication Apprehension in Generalized Contexts instrument than did students in the control group (Cronin, Grice, & Olsen, 1992).

Constructing Speaking Outlines

This IVI module provides tutorial and simulation instruction in constructing both conventional outlines and speaking outlines. The module was rated as enjoyable, effective, and easy-to-use in formative evaluations. Major topics include principles of conventional outlining (coordination, subordination, indentation, numbering, lettering); conventional outlining exercises; principles of constructing a

speaking outline; and analysis of examples of speaking outlines. Empirical evaluations support the efficacy of this IVI module in teaching users to construct effective conventional outlines and speaking outlines. Students receiving IVI in "Constructing Speaking Outlines" achieved significantly higher application test scores than did subjects in the control and comparison groups (Cronin, 1992a).

Using Speaking Outlines

This IVI module provides tutorial and simulation instruction in using a speaking outline to deliver a public speech. The module was rated as enjoyable, effective, and easy-to-use in formative evaluations. Major topics include using speaking notes in simulated rehearsals for a speech, using notes when using a lectern, using notes when not using a lectern, conducting an effective rehearsal with speaking notes, and using speaking notes when giving a public speech.

Developing Key Ideas: The Four S's

This module, along with an accompanying worksheet, provides tutorial and simulation instruction in effective organizational patterns for developing key ideas in a written or spoken message. Users learn to identify and define the four S's that are essential to

developing each key idea in a message (signpost, statement, support, summary); identify the use of each of the four S's in three sample speeches; and apply the four S's via worksheet exercises. Empirical evaluations support the efficacy of this IVI module. Students receiving IVI in "Developing Key Ideas" achieved significantly higher recall/application test scores than did subjects in the control and comparison groups (Cronin, 1992b).

Critical Thinking: Supporting Your Ideas with Good Evidence

This module provides tutorial and practice instruction in understanding and applying tests of evidence. Users are motivated to complete instruction by means of a game format. Dual screens and channels allow students to adapt the module to their individual learning styles. Major sections of this module include guidelines for good evidence, guided practice in evaluating evidence, and a timed application game to assess learning.

Mission Possible: Listening Skills for Better Communication

In this module students are provided with tutorials and simulations designed to improve

listening. Users are motivated to complete instruction by means of a game format. Dual screens and channels allow users to adapt the module to their personal learning styles. Major topics include identifying bad listening habits, assessing personal listening behavior, overcoming bad listening habits, and enhancing active listening. Empirical evaluations indicated that students randomly assigned to IVI on listening achieved significantly higher cognitive test scores and significantly higher gain scores on the Watson-Barker Listening Test (video version) than did students randomly assigned to a control group (Cronin & Myers, 1993).

EQUIPMENT NEEDS FOR INTERACTIVE VIDEO INSTRUCTION

This section lists the least expensive hardware necessary for implementing this interactive video instruction. At present, the IVI modules will play only on the Macintosh platform. However, the IVI programs are being cross-developed for the MS-DOS platform and should be available by mid-1994. Information on both platforms is provided below. More powerful platforms capable of running more advanced multimedia applications should be

considered. Institutions implementing IVI in oral communication will probably wish to run a number of other multimedia applications that require more powerful platforms. However, it is beyond the scope of this teaching aid review to explore the software and hardware options involved in more advanced multimedia applications.

The Macintosh Platform

Item	Approximate Price
Macintosh II si	$3,000 (includes monitor)
Videodisc player	$1,300
Monitor for videodisc player	$300
Interface cable	$100

The MS-DOS Platform

Item	Approximate Price
MS-DOS AT compatible computer (Order an AT computer which includes a VGA graphics adapter and compatible monitor, a high density disk drive, and an RS-232c serial port. A hard drive is recommended.)	$1,700
Videodisc player	$1,300
Monitor for videodisc player	$300
Interface cable	$50

CLASSROOM APPLICATIONS

The primary application at _____ University involves using IVI in conjunction with a speaking laboratory. The goals of the IVI/speaking laboratory method are to improve the quality of public speaking instruction and to provide cost-effective instruction in oral communication to more students. The IVI/speaking laboratory method provides individualized, self-paced, active instruction (versus passive mass lectures) by using IVI to present almost 50% of (and eventually most of) the instruction necessary to prepare students for public speaking performance. Students make individual appointments to use IVI outside the traditional classroom, thus expanding active learning opportunities in both time and space. The class instructor provides lecture material to supplement IVI and offers extensive feedback and evaluation of student performance in the speaking laboratory. Used in this manner, technology allows public speaking teachers to provide more performance feedback to more students.[2]

Each public speaking instructor using IVI modules to supplement classroom instruction should adapt these teaching aids to his or her needs. Instructors should

go through each IVI module to determine its applicability to their classes. Just as certain chapters in a textbook are omitted, corrected, or amended in a particular class; instructors should use only those IVI modules that support their instructional approach and should correct or amend instruction in any IVI module they choose to require (or recommend). IVI modules may be used in various ways to supplement public speaking instruction. The following suggestions explore some of the contributions that IVI can make to teaching and learning in public speaking classes. Although the suggestions are categorized according to instructor, student, and institutional applications; each suggestion has implications for each category.

Instructor Applications

IVI modules can be used to reduce the lecture time in class necessary to cover the basic instructional material, while simultaneously increasing opportunities to learn class material outside the traditional classroom. Students can be required to use IVI modules outside of class as partial preparation for speaking assignments, quizzes, or exams. This approach would enable instructors to devote more time in class to application and evaluation of student performance or to

introduce topics not previously covered.

Instructors should provide opportunities for students to discuss learning outcomes associated with IVI. Instructors could schedule conferences with students to discuss the material outside of class or could schedule in-class discussions after all students have completed a particular IVI module. Instructors can require students to write a paper describing the instructional content of specific IVI modules and evaluating the use of IVI as an instructional tool. This kind of activity provides important insight into student responses to the technology itself as well as the learning and skill development that is taking place.

Instructors who are absent from class may use IVI to provide effective instruction on selected topics during their absence(s) from class. This approach may be preferable to trying to find a colleague to cover the class and is generally preferable to using a linear videotaped lecture during an instructor's absence.

Where the demand on IVI equipment is greater than the ability of the facility to serve students, instructors can assign two or three students to work together on IVI modules. Alternatively, individuals

could be assigned to use specific IVI modules and required to present class reports on the instructional content as one of their speaking assignments.

Instructors may use IVI primarily to attempt to help low achievers raise their performance in the class. IVI generally raises average achievement more equitably across all student achievement levels than does conventional instruction (Cronin & Cronin, 1992b; Fletcher, 1990). Although high achievers usually prefer conventional instruction in coping with speech fright, most low achievers prefer IVI (Cronin, Grice, & Olsen, 1992). Instructors may wish to investigate theoretical explanations and explore the utility for low achievers of specific IVI programs in oral communication.

Instructors may wish to explore the effects of variations in the source, purpose, content, and timing of feedback in IVI versus conventional instruction on learning outcomes. For example, "because full and objective reporting to superiors (teachers) is difficult, determine if it is easier to admit deficiencies to a computer" (Cronin & Cronin, 1992b, p. 73). This may be particularly useful in areas such as coping with speech fright. Cronin, Grice, and Olsen

(1992) reported that many students found it easier to admit their speech fright to the computer than to their instructor. Instructors also can use IVI to increase feedback to students and to experiment with the effects of variations in the source of feedback on perceptions of control. "Because feedback from a high status source that is perceived as controlling (versus informative) produces decreased internal motivation (Cusella, 1980), determine if users perceive feedback from IVI to be less controlling than face-to-face feedback" (Cronin & Cronin, 1992b, p. 73). Feedback via IVI may be particularly beneficial to students in correcting performance problems in areas such as listening, developing key ideas, constructing speaking outlines, and testing evidence. Not only is such feedback immediate, students may perceive the feedback via IVI to be more informative and less controlling than feedback from the instructor.

Instructors can provide extra credit to all students completing specified IVI modules. A laboratory assistant can note the name and amount of time each student spends on each IVI module, or the instructor could request a computer printout of each user's responses to each program.

Instructors can include the completion of IVI modules as part of a contract grading environment. For example, students might be required to complete four IVI modules, attain an "A" on three speeches, and score at least an 85 on one exam to earn an "A" in the class.

Student Applications

Students who have missed class lectures can use IVI relevant to that material to help them prepare for exams and speaking assignments. Rather than borrowing a classmate's notes that may be incomplete or inaccurate or arranging individual meetings with their instructors, absentees can use high-quality, self-paced IVI at a time that is convenient for them.

Students who attended class lectures may need additional information or may wish to review lecture material. IVI may be used to provide additional information or review if it is similar in content to class lecture material.

Students can adapt IVI to their knowledge level and comprehension of a lesson. In a typical classroom it is usually impractical for the instructor to ensure that each student understands the material before moving on. However, the self-paced learning available via IVI allows students to repeat portions of the

lesson that they do not understand; and IVI programs can be written to require demonstrated understanding of particular material before a student is allowed to move on in the lesson.

Students can adapt IVI to their learning style. Most lectures, books, linear videotapes, and films are designed to be used in a linear fashion. IVI can be used in a non-linear fashion. Although not always desirable, students can move around in the program in response to their interest, knowledge, and learning objectives. Keefe (1979) indicated that some learners prefer auditory or verbal channels (older adults) and some prefer visual stimuli (teenagers and young adults). Well-designed IVI allows users to become the editors of the program, thus adapting the text, graphics, video, audio, animation, and slides available in IVI to their learning style. For example, users can focus on the text, or the audio or the video accompanying the text, or they can attempt to integrate all three stimuli to enhance their learning on a particular task.

Students can use the video simulations available in some IVI modules in oral communication to compare their understanding of complex public speaking

behaviors with video presentations of others' understanding of these same issues. Higher levels of skill performance require active discovery and application on the part of the learner. Realistic video simulations in IVI provide "an ideal medium for learning from other peoples' learning, a quality that seems particularly appropriate when dealing with the development of interpersonal skills" (Hansen, 1989, p. 13). For example, it may be more appropriate and more effective to use IVI to present video simulations of speakers dealing with and discussing speaking apprehension than to attempt to address these issues via live speakers in class.

Institutional Applications

Institutions may supplement mass lectures in public speaking courses with the self-paced individualized instruction available through IVI. This approach could provide the economy of the mass-lecture approach and the adaptation to individual learning styles available through well-designed IVI.

Institutions could develop their own IVI modules designed to meet their specific instructional objectives. Institutions should support and reward software development.

> Institutions also need to generate the software to make technology-based instruction possible. The council suggests that in redesigning their faculty reward systems, institutions acknowledge faculty for software development and testing as they do now for research and scholarship. (State Council of Higher Education for Virginia, 1992, p. 34)

Designing IVI for public speaking instruction may produce concomitant benefits in conventional instruction.

> Involvement of a teacher in an innovative approach to instruction may have a general effect on the quality of the instructor's teaching. Outlining objectives, constructing lessons, preparing evaluation materials, and working with computer materials--requirements in CBI (computer-based instruction)--may help a teacher to do a better job in a conventional teaching assignment. (Clark, 1985, p. 260)

Institutions may wish to use IVI primarily as an assessment tool. Printouts can provide information on each users' participation and performance including

items selected for study, time-on-task, latency of response, correct and incorrect answers on practice exercises, and performance on competency tests.

Institutions can encourage non-speech instructors who use public speaking exercises in oral communication across the curriculum to require their students to use IVI modules to help prepare for speaking assignments. IVI modules can provide instruction and feedback from communication experts at times convenient to student needs. Also, IVI makes it possible for students to have instruction and feedback available at times in the speech preparation process when it is most needed (when communication faculty may be unable to provide lectures to non-speech classes).

Institutions can establish (or expand) a public speaking laboratory available to any individual in the community or on campus. The IVI modules can be used to provide basic instruction on selected topics in public speaking to individuals unable to take a public speaking course without placing unreasonable demands on communication faculty.

SUMMARY

Interactive video instruction offers a unique and affordable means of expanding the traditional public

speaking classroom in time and space. IVI makes it possible for large numbers of students to experience self-paced, effective instruction outside the classroom. This review has discussed the distinctive features of IVI, the potential benefits of IVI, some of the IVI videodisc modules in oral communication currently available, the equipment required to institute IVI instruction, and possible classroom applications. The major thesis of this review is that IVI can provide effective oral communication instruction to students outside the classroom, thus allowing more time in the classroom for performance, feedback, evaluation, and discussion.

NOTES

[1] It is beyond the scope of this review to provide a detailed analysis of the empirical research regarding the pedagogical effects of IVI in soft skill areas (see Cronin and Cronin (1992b) for a detailed analysis of IVI research in soft skill areas including: (a) the instructional advantages of IVI over linear video instruction, (b) the instructional advantages of IVI over conventional instruction, (c) a methodological analysis of empirical research regarding learning outcomes from IVI, and (d) suggestions for theoretic and methodological refinements in IVI research).

[2] Although IVI has proven more effective than conventional methods of soft skill instruction and individual IVI units in oral communication have proven effective, the IVI package for public speaking instruction must be assessed empirically. We will conduct quasi-experimental studies to assess learning outcomes for public speaking students taught via the traditional lecture/performance method versus the IVI/speaking laboratory method using dependent variables such as nationally recognized tests of communication competence in public speaking.

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